US Army Corps
of Engineers
Wilmington District

Operations & Maintenance Dredging meets the shoreline

Presented by
Robert E. Sattin, P.E.

North Carolina Shore & Beach Preservation Association
Annual Meeting
November 18-19, 2002

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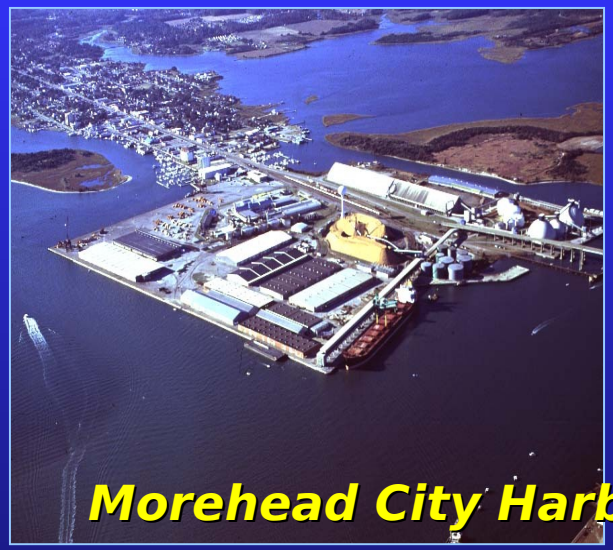
Operations & Maintenance

- Two deep-draft ports
- 300+ miles AIWW
- Oregon Inlet / Manteo
- Small navigation projects
- Shallow draft inlets

Wilmington Harbor


Morehead City Harbor

Navigation Projects

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Roanoke
VA
NC
Greensboro
Charlotte
Raleigh
Fayetteville
Wilmington
SC
Oregon Inle
Manteo
Washington
AIW
Morehead
City
Morehead City
Harbor
Bogue Inlet
New River Inlet
New Topsail Inlet
Carolina Beach Inlet
William O. Huske
Lock and Dam 2
Lock and Dam 1
Lockwoods Folly
Wilmington Harbor

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Hydraulic Pipeline Dredges

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Pipeline Dredge California

- *1994 Atlantic Beach Disposal*
- *30-inch Pipeline*
- *14,652-horsepower*
- *Pumps up to 3 miles without booster*

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Pipeline placement operations

Hopper Dredges

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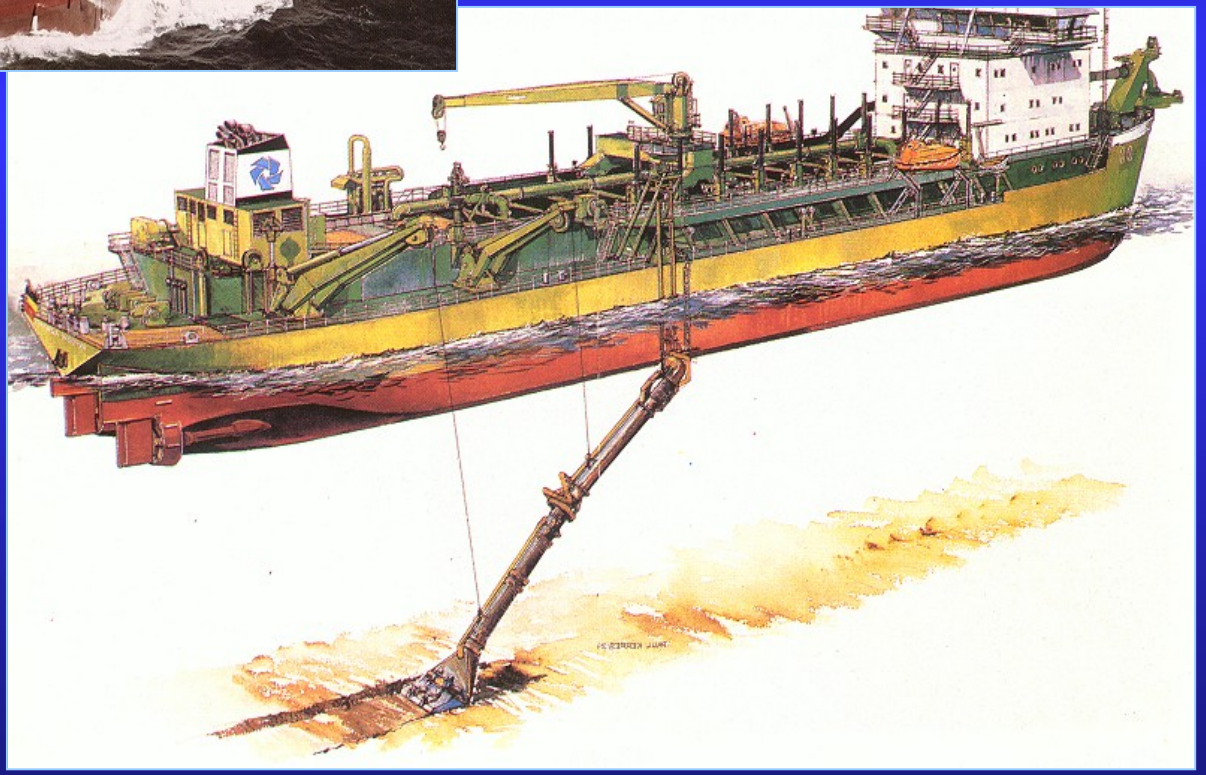

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Hopper Dredge Operations

Discharge & overflow

Direct pump out

Estimated dredging costs for various pipeline lengths

Distance	Equipment	Mobilization	Unit Price
30,000 L	30-inch dredge and booster	$2,100,000	$ 3.50 - $ 4.50 / CY
	(2nd booster @ $.20 / CY may be necessary at 28,000 LF)		
20,000 LF	30-inch dredge and booster	$2,100,000	$ 3.00 - $ 3.50 / CY
10,000 LF	30-inch dredge, no booster	$1,500,000	$ 2.50 / CY +/-
30,000 LF	Hopper w/ Pumpout	$1,100,000	$4.50 - $5.50 / CY

Notes: Each 10,000 LF of pumping distance adds $1.00 per CY cost for C/S dredges

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Beneficial Uses

Where beneficial use of dredged material is the least costly, environmentally appropriate option, it can be conducted at full Federal cost. When the cost of beneficial use is not the least-costly disposal option, a non-Federal sponsor is required to pay for the incremental cost

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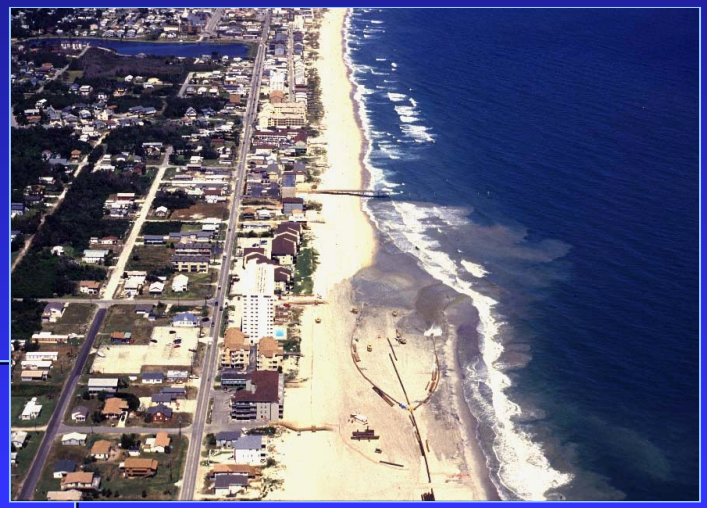
Operations & Maintenance



Environmental Windows vs. Availability of Contractor Plant

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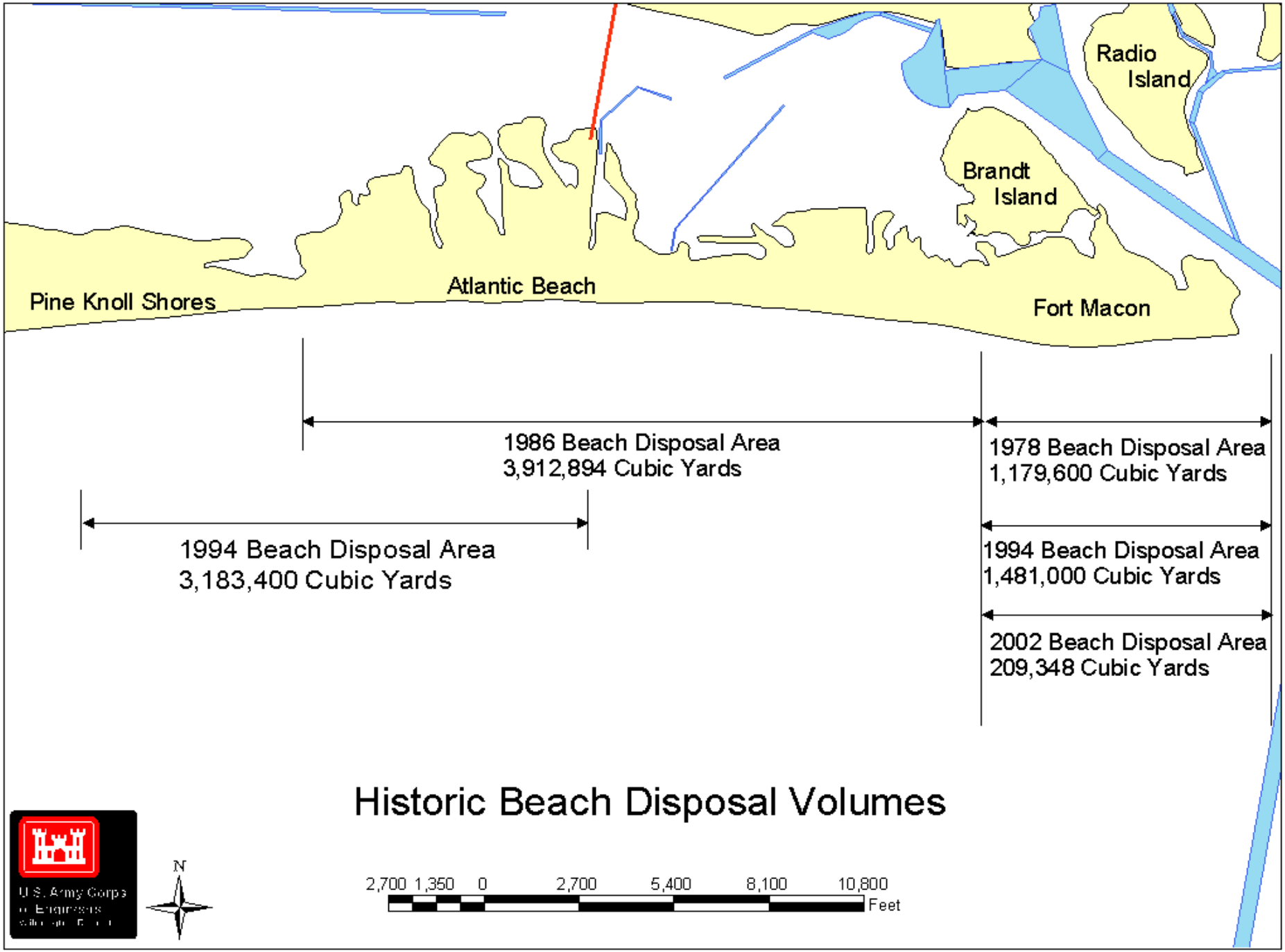
Environmental Factors

- Sea Turtles
  - water temperature
  - nesting on beach
- Dredging windows
  - Hopper, Jan 1-Mar 30
  - Pipeline, Nov 16-Apr 30



Historic Beach Disposal Volumes

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Bogue Banks April 22, 1978

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Beaufort Inlet November 11, 1993

Bogue Banks November 11, 1993

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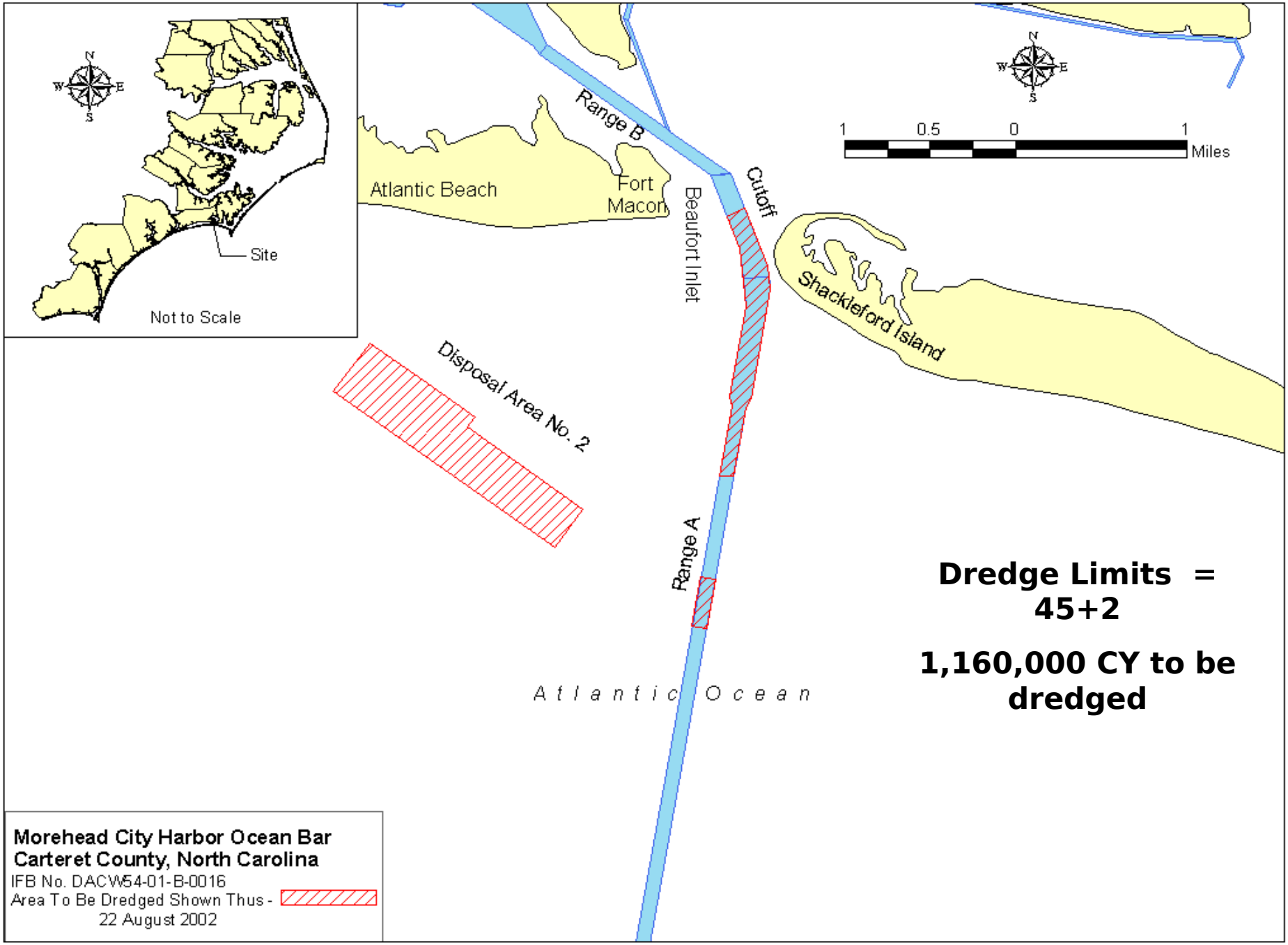
Morehead City Nearshore Disposal Area

- Established in 1995
- 7,900 feet long area along the 25-foot mean low water contour
- Retains sand in the active littoral transport system
- Limiting factors – Turtle Windows, Weather, Dredge Vessel Draft


Site
Not to Scale
Range B
Atlantic Beach
Fort Macon
Beaufort Inlet
Cutoff
Shackleford Island
Disposal Area No. 2
Range A
A t l a n t i c O c e a n
1 0.5 0 1
Miles
Dredge Limits = 45+2
1,160,000 CY to be dredged
Morehead City Harbor Ocean Bar
Carteret County, North Carolina
IFB No. DACW54-01-B-0016
Area To Be Dredged Shown Thus -
22 August 2002

Morehead City Nearshore Disposal Projects

Year	Nearshore Disposal Area
95	173,000 CY
96	
97	
98	313,000 CY
99	966,000 CY
00	1,437,000 CY
01	
02	382,000 CY